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## UNIT 12      RATIO ANALYSIS

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### Objectives

The main objectives of the unit are to:

- provide a board classification of ratios
- identify ratios which are appropriate for control of activities
- attempt a system of ratios which responds to the needs of control by management

### Structure

- 12.1 Introduction
- 12.2 Classification
- 12.3 The Norms for Evaluation
- 12.4 Computation and Purpose
- 12.5 Managerial Uses of the Primary Ratio
- 12.6 Summary
- 12.7 Key Words
- 12.8 Self Assessment Questions/Exercises
- 12.9 Further Readings

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### 12.1 INTRODUCTION

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You have already been exposed to the 'Introduction and analysis' of financial statements in Units 4-6 of this course. By now you might have acquired some familiarity with financial ratios that provide basic relationships about several aspects of a business. You may have observed that the Financial media (magazines like Fortune India, Business India Business World, and dailies like Economic Times, Financial Express and Business Standard, among many others) presents many of these ratios to analyse the strengths and weaknesses of individual business firms. Further, the Bombay Stock Exchange makes one of the most exhaustive efforts in the country to analyse financial data of a large number of companies through a set of 21 ratios. An internationally cited use of ratios comes in the ranking of the 500 largest corporations by a financial bi-monthly, viz., Fortune International. This exercise is based on five basic parameters viz., Sales, Assets, Net Income, Stockholders Equity, and Number of employees. The nine rating measures derived from these parameters are: sales change, profits change, net income as a percent of sales, net income as a per cent of stockholders equity, 10-year growth in earning per share, total return to investors (latest year and 10-year average), assets per employee, and sales per employee.

This is not an exhaustive list and you may come across many more sources of published ratios including the individual companies, many of which now provide summarised financial information and ratios for the past five or ten years. The point is that users of ratios are vast, ratios that emerge from financial data are numerous and uses to which these ratios can be put are many.



## 12.2 CLASSIFICATION

Financial ratios have been classified in a variety of ways. You may find the following broad bases having been employed in current literature:

**Primacy Criterion:** This distinguishes a measure, which could be considered useful for all kinds and sizes of business enterprises, from many other measures which are not so universal in usage. The first one has been called the **Primary Ratio** (viz., the Return on Investment or the ROI) and the other category called **Secondary measures** includes all other ratios. Such measures will essentially vary among firms, and they will select only such of those measures as are relevant for their needs. The British Institute of Management uses this classification for inter-firm comparisons.

**Ratios tagged to needs of interest groups:** The major interest groups identified for this purpose are:

- a) Management
- b) Owners
- c) Lenders

This classification assumes that. 'management group' is different from 'owner group'.

**Management and operational control:** Cost of goods sold and gross margin analysis, profit (net income) analysis, operating expense analysis, contribution analysis and analysis of working capital.

**Owner's viewpoint** Net profit to net worth, net profit available (to, equity shareholders) to equity share capital, earnings per share, cash flow per share and dividends per share.

**Lenders' evaluation:** Current Assets to Current Liabilities, Quick Assets (i.e., current assets minus inventories) to Current Liabilities, Total Debt to Total Assets, Long-term Debt to Net Assets, Total Debt to Net Worth, Long-term Debt to Net Worth, Long-term Debt to Net Assets and Net Profit before Interest and Taxes (i.e., NBIT) to Interest.

**Fundamental classification** Ratios under this classification are grouped according to a basic function relevant to financial analysis. Four such functional groups have been generally recognised.

- a) **Liquidity Ratios** are ratios which measure a firm's ability to meet its maturing short-term obligations. The most common ratio indicating the extent of liquidity or lack of it are current ratio and quick ratio.
- b) **Leverage Ratios** are ratios ' which measure the extent to which a firm has been financed by debt. Suppliers of debt capital would look to equity as margin of safety, but owners would borrow to maintain control with limited investment. And if they are able to earn on' borrowed funds more than the interest that has to be paid, the return to owners is magnified. (This aspect has been elaborated and illustrated in the next Unit of Financial and Operating Leverage). Example include debt to total assets, times interest earned, and charge coverage ratios.
- c) **Activity Ratios** are ratios which measure the effectiveness with which a firm is using its resources. Example include Inventory. turnover. Average collection period, Fixed assets turnover, and Total assets turnover.
- d) **Profitable Ratios** are ratios which measure management's overall effectiveness as shown by the returns generated on sales and investment. Examples



could be profit (net or gross) margin. Net Profit to total assets or ROI, Net profit after taxes to Net worth.

One more class of ratios is sometimes added to the four groups specified above. This is called the 'Market Value' group of ratios, which relate investors' expectations about the company's future to its present performance and financial conditions. Examples would cover Price-earnings (PE) and Market/book-value ratios.

The fundamental classification is probably the most extensively used mode of presenting financial statement analysis.

### Activity 12.1

Table 12.1 on next page lists 21 ratios being computed by the Bombay Stock Exchange. Tick the board class to which each of the 21 ratios belongs to in the blank columns of the Table.

You must have begun grouping the ratios on the basis of what you have learnt about them. However, we would help you in this exercise. The very first ratio and for that matter the first three ratios are figured on net worth which is a parameter of great interest to proprietors. Nevertheless, the ratios do not reflect either of the four fundamental ratios viz., liquidity, leverage, profitability and activity. Also, they are not primary since they do not measure final profitability of capital (or investment) committed to the firm. Hence, ratios 1 to 3 are secondary and owner-oriented. Of course, they do reveal one fundamental aspect viz., stability. The Bombay Stock Exchange classifies these ratios under the board group of 'Stability ratios'.

This exercise of classification has given you an idea about ratios, which are relevant for controlling business activities, and the ratio in which top management would be particularly interested. Obviously, they are activity ratios which we have classified as 'management-oriented' ratios. The primary ratio, which is of universal relevance to top management, will be specifically explained regarding its rationale and construction in this unit.

You have noticed that the basic flow of activities of a business firm follows a certain sequence:

Investment decision → financing of investment → acquisition of resources  
deployment of resources → disposal of output → reinvestment of surplus.

This sequence needs some explanation. A typical business firm would take a decision to invest after an analysis of the projected inflows and outflows of the project. This will be followed by a plan to finance the project, which may be debt finance and / or proprietors' own funds. Finance will then be utilized to build facilities and commercial output will be obtained as per the project schedule (assuming there are no over-runs and delays) Sales revenue will follow the disposal of the output and after meeting all costs and expenses (including tax and finance charges), a decision will be taken to compensate the owners (dividend decision) and reinvest the balance, if any.

You will appreciate that the cycle of business activities commences with the deployment of resources and terminate in the disposal of output. A business would like to have as many such cycles as possible during a time period, say a year. Apart from increasing the number of such cycles during a time period the management would be interested to reduce costs and expenses to the minimum at each stage of the cycle. Accounting ratios, which belong to the category of "management-oriented activity ratios", enable business firms to exercise control over operations. The next section of this unit focuses attention on these ratios.

**Table 12.1 : Table listing 21 ratios being computed by the Bombay Stock Exchange**

[illegible]



## 12.3 THE NORMS FOR EVALUATION

You may just be wondering as to how we control activities through ratios. The answer is not difficult to seek. Ratios that we have identified for control of activities measures relationships between key elements at any point of time. Such a measure is then compared with some 'norm' and the causes for deviation investigated. An action-plan is then prepared and implemented to remove the cause(s). For example, Nagpur Textile Mills Ltd. reports 89 days of inventories held on an average against net sales during the year 2002. Now, how do we judge if the figure of '89 days' is just about okay for a firm like "Nagpur Textile Mills Ltd."? The following appear to be the ways for evaluating this figure:

- a) **Against a trend over time:** The following data may be observed for Nagpur Textile Mill:

Year	Average No. of days of inventory*
1998	90
1999	118
2000	115
2001	107
2002	98

$$\text{*Average No. of days} = \text{Net sales} \div \frac{\text{Opening inventory} + \text{Closing inventory}}{2/365}$$

- b) **Against an average of some past period:** The relevant data for Nagpur Textile Mill may be evaluated on the basis of the mean of average number of days viz.,  $(90 + 118 + 115 + 107 + 89)/5 = 519/5 = 104$  days approximately.
- c) **Against an industry average:** A certain number of firms chosen (randomly or otherwise) from textile industry, to which Nagpur Textile Mill Ltd. belongs, may be used to compute the industry average as a norm. Thus; data relating to average number of days of inventory of, say, 20 textile units of the size and type of Nagpur Textile Mills Ltd. may be averaged for a particular year for which Nagpur Textile's ratio is being evaluated. Period averages for firms may also be used to obtain a grand mean for evaluation.
- d) **Against an average of a cross-section sample:** The Reserve Bank of India publishes financial statistics of joint companies. Their sample for the period 1998-99 to 2000-01 included 1927 public limited companies (with paid up capital of Rs 100 crores and above). Year-wise averages for corporate sector as a whole are available. In a similar manner, the ICICI publishes elaborate data on financial performance of companies assisted by them. The latest study pertains to the year 1984-85 and included 417 companies in different industry groups. This sample covers around 50 per cent of the total private corporate sector in terms of paid-up capital. Year-wise average for industry groupings are available.

## Activity 12.2



The Study of Financial Performance presents the following data with regard to inventory turnover of 43 textile companies.

Year	Inventory as % of sales		
	34 composite mills	9 spinning mills	Total 43 mills
1997-98	24.8	25.1	24.8
1998-99	26.5	24.2	26.3
1999-2000	26.4	24.2	26.1
2000-2001	26.0	22.9	25.6
2001-2002	24.4	23.7	24.3

Comment on the suitability of the given data to evaluate the inventory position of Nagpur Textile Mills Ltd. in the year 2002.

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## 12.4 COMPUTATION AND PURPOSE

A summary of management - oriented activity ratio are given below. This describes the ratios and also their main purposes.

### Activity Ratios (Secondary Group)

Ratio	Computation Method	Purpose(s)
<b>I Cost of Goods Sold and Gross Margin Analysis</b>		
1. Cost of Goods sold	Cost of Goods sold/ Net Sales	Provide an idea of “gross margin” which in turn would depend on relationship between prices, volumes and costs
2. Gross Margin	Net Sales - Cost of goods sold/net sales	
<b>II Profit Analysis</b>		
3. Net Margin	Net Profit / Net Sales	Reflects management's ability to operate business to recoup all costs & expenses (including depreciation, interest and taxes) and also to provide a compensation to owners
4. Operating Margin	Net operating Income before Interest and Taxes/Net Sales	Provides a view of operating effectiveness
5. Post-tax Margin	Net Profit after tax but before Interest*/ Net Sales	Shows after-tax margin to both owners and lenders.

\* The numerator of post-tax margin may be obtained by adding back to net profit the after-tax cost of interest on debt which is pre-tax interest *times* (1-tax rate)



	Ratio	Computation Method	Purpose(s)
<b>III Expense Analysis</b>			
6	Operating Ratio	Operating expenses / Net sales	Reflects the incidence of operating expenses (which are defined variously for different costing systems)
<b>IV Contribution Analysis</b>			
7	Total contribution	Net sales - directly variable costs / Net Sales	Indicates the total margin provided by operations towards fixed costs and profits of the period
<b>V Management of Capital</b>			
8	Gross Assets	Net Sales/ Total assets	Effectiveness of the use of all assets viz., current and non-current.
9	Net Assets turnover	Net Sales / Total assets - current liabilities	Effectiveness of assets employed on the assumption that current liabilities are available to the business as a matter of course, and will effectively reduce the assets required to be employed
10	Inventory turnover	Net Sales or Cost of Goods Sold / Average Inventories	Shows the number of times inventory replenishment is required during an accounting period to achieve a given level of sales
11	Receivables turnover	Net Sales / average receivables	Amount of trade credit allowed and revolved during a year to achieve a level of sales.
12	Average collection period	$\frac{\text{Average Receivables}}{\text{Net Sales}} \times 365$	Evaluates the effectiveness of the credit period granted to customers.

### Activity 12.3

State whether the following statements are True or False :

- a) Cost of goods sold + Gross Margin = Net Sales ☐ True ☐ False
- b) Net margin is the only measure of profitability of a manufacturing firm ☐ True ☐ False
- c) Net operating Income (NOI) is the same as Earnings before Interest and Taxes (EDIT) ☐ True ☐ False
- d) The numerator of the ratio called "Post-tax margin" is obtained as follows Net profit after interest, depreciation and taxes + Interest (1-tax rate) ☐ True ☐ False
- e) In calculating the operating ratio, all firms employ a standard definition of operating expenses. ☐ True ☐ False
- f) The ratio called "total contribution" can also be calculated as follows : Fixed costs/Net sales - Variable costs ☐ True ☐ False
- g) Net assets turnover is calculated by  $\frac{\text{Net sales}}{\text{Net Fixed Assets} + \text{Net Current Assets} + \text{Other assets}}$  ☐ True ☐ False
- h) In computing the inventory turnover ratio, cost of goods sold is a better numerator than net sales ☐ True ☐ False



- i) The ratio called “Average collection period” evaluates all aspects for credit policy ☐ True ☐ False
- j) Net sales are gross sales as reduced by returns, rebates and excise duty ☐ True ☐ False

You have been through a review of the select ratios, which focus managerial attention on some of the critical aspects of a firm's activities. You may acquire a greater degree of confidence in the use of the ratios summarised above if you review their construction process also. What, therefore, follows is an example relating to a company from the paper industry. You have to calculate the twelve ratios tabulated in this section of the unit.

#### Activity 12.4

Compute the twelve activity ratios for the three years with the help of the following information, which has been extracted from the annual accounts of Mahud Paper Industries Ltd. Also offer you comments. On the basis of the limited information available with you what areas would you identify for control?

		Year ending on 31 <sup>st</sup> March			
		2001	2002	2003	2004
		(Amount in Rs. Crores)			
<b>Balance Sheet (Select items)</b>					
1.	Current Assets		38.28	39.74	52.23
2	Of which Inventories	17.89	21.70	22.33	26.37
2A	Of which S. Debtors	6.91	10.17	10.49	10.93
3	Net Fixed Assets		47.68	47.18	50.08
4	Total Assets		90.26	91.21	106.60
5.	Current Liabilities		41.95	43.87	45.02
<b>Profit &amp; Loss Statement (Select Items)</b>					
6	Net Sales		95.09	113.60	155.29
7.	Cost of goods sold		80.88	93.12	130.65
8.	Directly variable expenses (Wages, salaries and direct manufacturing expenses)		61.79	73.20	101.41
9.	Interest		4.81	4.54	5.44
10.	Operating Profit (after depreciation and interest)		.17	.39	2.60
11	Non-operating profit		4.34	2.49	3.27
12.	Pre-tax-profit		4.51	2.88	5.87
13.	Provision for taxes		_____	_____	.80
14.	Net Profit		4.51	2.88	5.07

### 12.5 MANAGERIAL USES OF THE PRIMARY RATIO

The return on investment has been aptly regarded as a primary ratio because it specifies the relative net profit earned on the capital employed. This is one single measure where the final outcome of all business activities gets recorded. It provides not only a vehicle for measuring relative business efficiency but also focuses attention on whether an adequate return has been earned in accordance with the expectations of the investors on the capital contributed by them.

In many cases it becomes necessary to disaggregate an organisation into divisions and the return on divisional investment can be employed to gauge the divisional performance





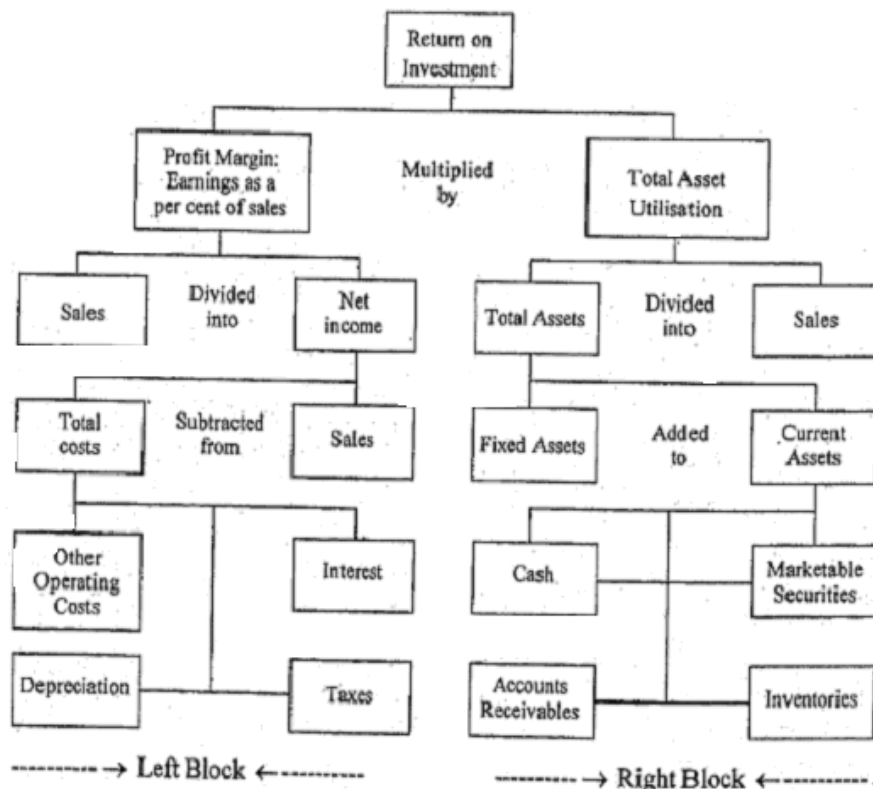
However, it may be stated that the concept of ROI (Return on Investment) is not free from ambiguity. This is primarily due to the fact that numerator and denominator of this ratio i. e. “return” and “capital” are subject to differing interpretations. As standard definitions of these two basic terms do not exist as yet, the firms define the terms according to their own thinking. While some firms may define “investment” quite broadly, others may define it narrowly. As a consequence of this, variations of ROI are found in “practice”, e.g.; ROA (i.e. Return on Assets).

You will appreciate these variations better as you go along with the discussion, and the illustrations regarding the analysis of ROI.

You may note that the use of ROI which in fact is a combination of some other ratios was pioneered by Du pont. That is why it is sometimes known as the Du point system of Financial control.

The Du pont chart is presented in Figure 12.1 and it may be of interest to you to note the manner in which the various key elements converge into a single measure viz., the Return on Investment: The right block charts out the investment made in various assets and the left block depicts the earnings and costs flowing in and out of the utilisation of these assets. Both the net income and total assets are then related to sales to finally yield the single measure, which peaks the pyramid viz., the ROI.

You will notice that Cash, Accounts Receivable, Marketable Securities and Inventories shown on the right block at the bottom are added up as current assets, which then are added (leftward) to fixed assets. This aggregates into total assets, which are then divided (rightward) into sales to produce a ratio shown as Total Asset Utilisation or Total Assets Turnover. A similar kind of measure based on income emerges from the left block. The bottom four boxes at left sum up Interest Taxes, Depreciation and other operating costs into Total Costs which are then deducted (rightward) from Sales to yield Net Income: The Net Income is divided (leftward) into sales to generate, a ratio known as the Net Margin. The two penultimate measures viz., Total Asset Utilisation and Net Margin are then





multiplied together to figure out the Return on Investment at the top box of the chart.

The return on investment may be expressed as a relationship in the following formula:

$$\text{ROI} = \text{Total Asset Turnover} \times \text{Net Margin}$$

$$\text{or } \frac{\text{Net Income}}{\text{Total Assets}} = \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Net Income}}{\text{Sales}}$$

You may further notice that total assets may be financed partly by owners' funds (known as equity) and partly by borrowed funds (recognised as debt). Given the proportion of assets financed by equity, an appropriate measure of Return on Equity (ROE) may also be derived from the ROI. This will be given by

$$\text{ROE} = \text{ROI} / \text{Proportion of Total Assets financed by Equity}$$

$$\begin{aligned} &= \text{ROI} \div \frac{\text{Equity}}{\text{Total Assets}} \\ &= \text{ROI} \times \frac{\text{Total Assets}}{\text{Equity}} \end{aligned}$$

The term Total Assets / Equity may be recognised as Equity Multiplier and then ROE will be equal to ROI times the Equity Multiplier.

### Versions of ROI

A large number of variations of ROT are found in practice, depending upon how "Investment" and "Return" are defined "Investment" may be defined to include any of the following:

- |                                      |  |
|--------------------------------------|--|
| 1. Gross capital employed            | Net fixed assets + total current assets + other assets                                     |
| 2. Net capital employed              | Net fixed assets + net current assets + other assets                                       |
| 3. Proprietors' net capital employed | Total assets - (Current liabilities + long-term borrowing + any other outside funds)       |
| 4. Average capital employed          | Opening + closing balances of capital, reserves, accumulated depreciation and borrowings/2 |

Similarly, 'Return' may be defined to included any of the following:

- 1 Gross profit
- 2 Profits before depreciation, interest and taxes (PBDIT)
- 3 Profits before depreciation, interest and taxes (excluding capital and extraordinary nary profits): PBDIT
- 4 Profits before tax (PBT)
- 5 Profits before tax (excluding capital and extraordinary profits): PBT\*

The following versions of ROI are used in practice :

- |                                      |   |
|--------------------------------------|---|
| 1. Gross Return on Investment        | = Gross Profit/Total Net Assets                                   |
| 2. Net Return on Investment          | = Net Profit/Total Net Assets                                     |
| 3. Return on Capital Employed (ROCE) | = Profit before tax + Interest/Net Worth + Interest bearing debt. |
| 4. ROI (based on PBDIT)              | = PBDIT as per cent of average capital Employed                   |



5. ROI (based on PBT)

= PBT average of capital and  
as per cent of reserves.**Activity 12.5**

The following particulars have been selectively taken from the annual accounts of Kavali Woolen Mills Ltd., for the years 2001, 2002 and 2003.

Particulars	Years ending on March 31st		
	2001	2002	2003
<b>Income Statement</b>			
1. Operating profit	18.75	22.78	28.48
2. Interest	6.74	8.90	10.78
3. Gross Profits (1- 2)	12.01	13.88	17.70
4. Depreciation	7.66	8.84	8.84
5. Profit before tax (PBT) : (3 - 4)	4.35	5.04	8.86
6. Tax	0.05	.01	.01
7. Net Profit (5 - 6)	4.30	5.03	8.76
<b>Balance Sheet</b>			
1 Fixed Assets (gross)	94.61	112.28	162.16
2. Accumulated Depreciation	26.90	34.34	38.26
3 Net fixed assets (1 - 2 + capital work in progress)	75.16	107.23	127.66
4 Investments	8.48	10.12	12.29
5 Current Assets	42.61	59.97	75.17
6 Current Liabilities and Provisions	30.95	36.53	56.30
7 Net Current Assets (5 - 6)	11.66	23.44	18.87
8 Total Net Assets (3 + 4 + 7) Financed by	95.30	140.79	158.82
9 Net worth	33.97	39.41	53.16
10 Borrowings	61.33	101.38	105.66
of which long-term	39.27	71.09	63.61

- a) Compute Gross Return on Investment, Net Return on Investment, and Return on Capital Employed for the three years. What are your conclusions?
- b) Also derive the Return on Equity from the ROI (i.e., Net return on Total Net, Assets).

**Illustration 12.1****EVERLIGHT COMPANY LIMITED**

**Comparative Balance Sheet**  
**December 31, Year 1 and Year 2**

	December 31st	
	Year 1	Year 2
<b>Assets</b>	<b>Rs.</b>	<b>Rs.</b>
Cash	1,000	1,200
Bank	6,000	7,500
Accounts Receivable	12,600	14,800
Inventory	18,400	20,500
Repayments	800	850
Land and Building	20,000	24,000



Plant and Machinery	30,000	32,000
	<u>88,800</u>	<u>1,00,850</u>
<b>Liabilities and Shareholders' Equity</b>		
Bills Payable	4,000	7,850
Accounts Payable	6,400	6,000
Other Current Liabilities	2,000	2,200
Debentures (10%)	20,000	18,000
Preference Shares (12%)	10,000	10,000
Ordinary Shares. Rs. 10 each	40,000	50,000
Retained Earnings	6,400	6,800
	<u>88,800</u>	<u>1,00,850</u>

#### Income and Retained Earnings Statement of the Year Ended December 31, Year 2

Sales Revenue		Rs. 60,000
Less Expenses:	Rs. 28,000	
Cost of Goods Sold		
Selling	8,000	
Administrative	6,000	
Interest	2,000	
Income Tax	6,400	
Total Expenses		<u>50,400</u>
Net Income		<u>9,600</u>
Less Dividend :	1,200	
Preferred		
Ordinary	8,000	
		<u>9,200</u>
Increase in Retained Earning for Year 2		<u>400</u>
Retained Earnings, December 31, Year 1		<u>6,400</u>
Retained Earnings, December 31, Year 2		<u>6,800</u>

With the above information, let us compute the following ratios

- Rate of Return on Assets
- Profit Margin (before interest and related tax effect)
- Cost of Goods Sold to Sales Percentage
- Selling Expenses to Sales Percentage
- Operating Expense Ratio
- Total Assets Turnover
- Accounts Receivable Turnover
- Inventory Turnover
- Rate of Return on Ordinary Share Equity
- Current Ratio
- Quick Ratio
- Long-Term Debt Ratio
- Debt Equity Ratio
- Times interest Charges Earned



- o) Earnings per (Ordinary) Share
- p) Price Earning Ratio
- q) Book Value per Ordinary Share

The income tax rate is 40 per cent. The market price of an ordinary share at the end of Year 2 was Rs. 14.80.

Let us take all these ratios one by one.

- a) Rate of Return on Assets.  

$$= \frac{\text{Rs. } 9,600 + (1 - .40) (\text{Rs. } 2,000)}{.5 (\text{Rs. } 88,800 + \text{Rs. } 1,00,850)} = 11.39 \text{ per cent}$$
- b) Profit Margin Ratio  

$$= \frac{\text{Rs. } 9,600 + (1 - .40) (\text{Rs. } 2,000)}{\text{Rs. } 60,000} = 18 \text{ per cent}$$
- c) Cost of Goods Sold to Sales Percentage  

$$= \frac{\text{Rs. } 28,000}{\text{Rs. } 60,000} = 46.67 \text{ per cent}$$
- d) Selling expenses to Sales Percentage  

$$= \frac{\text{Rs. } 8,000}{\text{Rs. } 60,000} = 13.33 \text{ per cent}$$
- e) Operating Expense Ratio  

$$= \frac{\text{Rs. } 8,000 + \text{Rs. } 6,000}{\text{Rs. } 60,000} = 23.33 \text{ per cent}$$
- f) Total Asset Turnover  

$$= \frac{\text{Rs. } 60,000}{.5 (\text{Rs. } 88,800 + \text{Rs. } 1,00,850)} = .63 \text{ times per year}$$
- g) Accounts Receivable Turnover  

$$= \frac{\text{Rs. } 60,000}{.5 (\text{Rs. } 12,600 + \text{Rs. } 1,4,800)} = 4.38 \text{ times per year}$$
- h) Inventory Turnover Ratio  

$$= \frac{\text{Rs. } 28,000}{.5 (\text{Rs. } 18,400 + \text{Rs. } 20,500)} = 1.44 \text{ times per year}$$
- i) Rate of Return on Ordinary Share Equity  

$$= \frac{\text{Rs. } 9,600 - \text{Rs. } 1,200}{.5 (\text{Rs. } 46,400 + \text{Rs. } 56,800)} \times 100 = 16.28 \text{ per cent}$$
- j) Current Ratio  

December 31, Year 1 :  $\frac{\text{Rs. } 38,800}{\text{Rs. } 12,400} = 3.13:1$

$$\text{December 31, Year 2 : } \frac{\text{Rs. } 44,850}{\text{Rs. } 16,050} = 2.79 : 1$$



k) Quick Ratio :

$$\text{December 31, Year 1 : } \frac{\text{Rs. } 19,600}{\text{Rs. } 12,400} = 1.56 : 1$$

$$\text{December 31, Year 2 : } \frac{\text{Rs. } 23,500}{\text{Rs. } 16,050} = 1.46 : 1$$

l) Long-term Debt Ratio

$$\text{December 31, Year 1 : } \frac{\text{Rs. } 20,000}{\text{Rs. } 80,400} = 24.86 \text{ per cent}$$

$$\text{December 31, Year 2 : } \frac{\text{Rs. } 18,000}{\text{Rs. } 84,800} = 21.23 \text{ per cent}$$

m) Debt Equity Ratio

$$\text{December 31, Year 1 : } \frac{\text{Rs. } 20,000}{\text{Rs. } 46,400} = 43.1$$

$$\text{December 31, Year 2 : } \frac{\text{Rs. } 18,000}{\text{Rs. } 56,800} = 31.69$$

(Equity may or may not include retained earnings. Here, retained earnings have been included)

n) Times Interest Charges Earned

$$\frac{\text{Rs. } 9,600 + \text{Rs. } 6,400 + \text{Rs. } 2,000}{\text{Rs. } 2,000} = 9 \text{ times}$$

o) Earnings per Ordinary Share (EPS)

$$\begin{aligned} \text{December 31 Year 2:} \\ = \frac{\text{Rs. } 8,400}{.5 (4000 + 5000)} = \text{Rs. } 1.87 \end{aligned}$$

p) Price-Earnings Ratio

$$\begin{aligned} \text{December 31, Year 2:} \\ = \frac{14.80}{1.87} = 7.91 \text{ times} \end{aligned}$$

q) Book Value per Ordinary Share

$$\text{December 31, Year 1 : } = \text{Rs. } \frac{46,400}{4,000} = \text{Rs. } 11.60$$

$$\text{December 31, Year 2 : } = \text{Rs. } \frac{56,800}{5,000} = \text{Rs. } 11.36$$

**Illustration 12.2**

The information contained in Tables 12.1 to 12.4 relate to a company for the year 2002 and 2003, we shall attempt a comprehensive analysis.

**Table 12.1****Megapolitan Company Ltd.****Condensed Balance Sheet for the years ending  
December 31, 2003 and December 31, 2002**

	Increase or (Decrease)			Percentage of total Assets		
	2003 Rs.	2002 Rs.	Rs.	%	2003	2002
<b>ASSETS</b>						
Current Assets	1,95,000	1,44,000	51,000	35.4	41.1	33.5
Plant and equipment (net)	2,50,000	2,33,500	16,500	7.1	52.6	54.3
Other Assets	30,000	52,500	(22,500)	(42.9)	6.3	12.2
Total	4,75,000	4,30,000	45,000	10.5	100.0	100.0
<b>LIABILITIES &amp; CAPITAL</b>						
Liabilities:						
Current liabilities	56,000	47,000	9,000	(19.1)	11.8	10.9
12% Debentures	1,00,000	1,25,000	(25,000)	(20.0)	21.1	29.1
Total	1,56,000	1,72,000	16,000	(9.3)	32.9	40.0
Shareholder's equity						
9% preference shares (Rs. 100 each)	50,000	50,000			10.5	11.6
Equity shares (Rs. 10 each)	1,25,000	1,00,000	25,000	25.0	26.3	23.2
Premium on issue of shares	35,000	20,000	15,000	75.0	7.4	4.7
Retained earnings	1,09,000	88,000	21,000	23.9	22.9	20.5
Total shareholders equity	3,19,000	2,58,000	61,000	23.6	67.1	60.0
Total	4,75,000	4,30,000	45,000	10.5	100.0	100.0

**Table 12.2****Income statement for the years ended December 31, 2003 and December 31, 2002**

	Increase or (Decrease)			Percentage of net Sales		
	2003 Rs.	2002 Rs.	Rs.	%	2003	2002
Net sales	4,50,000	3,75,000	75,000	20.2	100.0	100.0
Cost of goods sold	2,65,000	2,10,000	55,000	26.2	58.9	56.0
Gross profit on sales	1,85,000	1,65,000	20,000	12.1	41.1	44.0
Operating expenses:						
Selling	58,500	37,500	21,000	56.0	13.0	10.0
Administrative	63,000	47,500	15,500	32.6	14.0	12.7
Total	1,21,500	85,000	36,500	42.9	27.0	22.7
Operating income	63,500	80,000	(16,500)	(20.6)	14.1	21.3
Interest expense	12,000	15,000	3,000	(20.0)	2.7	4.0



Income before income taxes	51,500	65,000	(13,500)	(20.8)	11.4	17.3
Income taxes	14,000	20,000	6,000	(30.0)	3.1	5.3
Net Income	37,500	45,000	(7,500)	(16.7)	8.3	12.0

**Table 12.3**  
**Statement of Retained Earnings**  
**for the years ended December 31, 2003 and December 31, 2002**

	<b>Increase or (Decrease)</b>			
	<b>2003 Rs.</b>	<b>2002 Rs.</b>	<b>Rs. Rs.</b>	<b>%</b>
Retained earnings, beginning of year	88,000	57,500	30,500	53.
Net Income	37,500	45,000	(7,500)	(16.7)
	1,25,500	1,02,500	23,000	22.
Less : Dividends on equity shares	12,000	10,000	2,000	20.
Dividends on preference shares	4,500	4,500		
	16,500	14,500	2,000	13.
Retained earnings, end of year	1,09,000	88,000	21,000	23.

**Table 12.4**  
**Schedule of Working Capital**  
**as at December 31, 2003 and December 31, 2002**

	<b>Increase or (Decrease)</b>				<b>Percentage of total current items</b>	
	<b>2003 Rs.</b>	<b>2002 Rs.</b>	<b>Rs.</b>	<b>%</b>	<b>2003</b>	<b>2002</b>
Current Assets:						
Cash	19,000	20,000	(1,000)	(5.0)	9.7	13.9
Receivables (net)	58,500	43,000	15,500	36.0	30.0	29.9
Inventories	90,000	60,000	30,000	50.0	46.2	41.6
Prepaid expenses	27,500	21,000	6,500	31.0	14.1	14.6
Total current assets	1,95,000	1,44,000	51,000	35.4	100.0	100.0
Current liabilities						
Bills Payable	7,300	5,000	2,300	46.0	13.1	10.7
Accounts payable	33,000	15,000	18,000	120.0	58.9	31.9
Accrued liabilities	15,700	27,000	(11,300)	(41.9)	28.0	57.4
Total current liabilities	56,000	47,000	9,000	19.1	100.0	100.0
Working capital	1,39,000	97,000	42,000	43.3		

Using the information in the above Tables let us consider analyses that would be of particular interest to:

- Equity shareholders
- Long-term creditors
- Short-term creditors

**Equity shareholders :** Equity shareholders, present and potential, look primarily to the company's record of earnings. They are therefore interested in relationships such as earnings per share (EPS) and dividends per share. Earnings per share are computed by dividing the income available for equity shareholders by the number of equity shares outstanding during the year. Any preference dividend must be subtracted from the net income to ascertain the income available to equity shareholders.





	<b>2003 Rs.</b>	<b>2002 Rs.</b>
Net Income	37,500	45,000
Less Preference dividend	4,500	4,500
Income available to equity shareholders	33,000	40,500
Equity shares outstanding during the year	12,500	10,000
Earnings per (Equity) share	2.64	4.05

While dividend may be of prime importance to some equity shareholders, it may not be so for other shareholders. Some shareholders may be interested in receiving a regular cash income, while others may be more interested in securing capital gains through rising market prices. In comparing the merits of alternative investment opportunities, we should therefore relate earnings and dividends per share to the market, value of shares. Dividends per share divided by market price per share would give yield rate on equity shares. Dividend yield is of particular importance to those investors whose objective is to maximise the dividend income from their investments.

Earnings performance of equity shares is often expressed as price earning ratio by dividing the market price per share by the annual earnings per share. Thus a share selling for Rs. 40 and having earnings of Rs. 5 per share in the year just ended may be stated to have a price-earning ratio of 8 times.

Assuming that the 2,500 additional equity shares issued by the company on January 1, 2003 received the full dividend of 96 paise in 2003, and further assuming the price of the equity shares at December 31, 2002 and December 31, 2003 as given in Table 12.5, earnings per share and dividend yield may be summarised as follows.

Table 12.5

## Earnings and dividends per equity share

<b>Date</b>	<b>Assumed Market value per share</b>	<b>Earnings per share</b>	<b>Price- earnings ratio</b>	<b>Dividend per share</b>	<b>Dividends yield %</b>
	<b>Rs.</b>	<b>Rs.</b>			
Dec. 31, 2002	18	4.05	4.44	1.00	5.56
Dec. 31, 2003	14	2.64	5.30	0.96	6.86

The decline in market value during 2003 presumably reflects the decrease in earnings per share. The investors evaluating these shares on December 31, 2003 would consider whether a price earning ratio of 5.30 and the dividend yield of 6.86 represented a satisfactory situation in the light of alternative investment opportunities. We can also calculate the book value per share.

Table 12.6

## Book value per equity share

	<b>2003 Rs.</b>	<b>2002 Rs.</b>
Total shareholder's equity	3,19,000	2,58,000
Less: Preference shareholders equity	50,000	50,000
Equity of ordinary shareholders	2,69,000	2,08,000
Number of shares outstanding	12,500	10,000
Book value per equity share	21.52	20.8



Book value indicates the net assets represented by each equity shares. This information is helpful in estimating a reasonable price for company shares, especially for small companies whose shares are not publicly traded. However, the market price of the shares of a company may significantly differ from its book value depending upon its future prospects with regard to earnings.

**Long-term Creditors:** Long-term lenders (or creditors) are primarily interested in two factors:

1. The firm's ability to meet its interest requirements.
2. The firm's ability to repay the principal of the debt when it falls due.

From the viewpoint of long-term creditors, one of the best indicators of the safety of their investments may be the fact that, over the life of the debt, the company has sufficient income to cover its interest requirements by a wide margin. A failure to cover interest requirements may have serious repercussions on the stability and solvency of the firm. A common measure of the debt safety is the ratio of income available for the payment of interest to annual interest expenses, called **number of time interest earned**. This computation for Megapolitan Company would be as follows:

#### Number of Times Interest Earned

		2003 Rs.	2002 Rs.
Operating income (before interest and income taxes)	a)	63,500	80,000
Annual interest expense	b)	12,000	15,000
Times interest earned (a - b)		5.29	5.33

Long-term creditors are interested in the amount of debt outstanding in relation to the amount of capital contributed by shareholders. The debt ratio is computed by dividing long-term debt by shareholders equity as shown below:

#### Debt Ratio

		2003 Rs.	2002 Rs.
Long-term/debt	a)	1,00,000	1,25,000
Shareholders equity	b)	3,19,000	2,58,000
Debt ratio (a - b)		31.35	48.45

From creditors' point of view, the lower the debt ratio (or higher the equity ratio) the better it is. The lower debt means the shareholders have contributed a bulk of funds to the business, and therefore the margin of protection to creditors against shrinkage of assets is high.

**Short-term Creditors:** Bankers and other short-term creditors have an interest similar to those of the equity shareholders and debenture holders who are interested in the profitability and long-term stability of the business. Their primary interest, however, is in the current position of the firm, i.e. its ability to generate sufficient funds (working capital) to meet current operating needs and to pay current debts promptly.

The amount of working capital is measured by the excess of current assets over current liabilities. What is important to short-term creditors is not merely the amount of working capital available but more so-is its quality. The main factors affecting the quality of working capital are (i) the nature of the current assets comprising the working capital, and (ii) the length of time required to convert these assets into cash. In this context we can calculate the following ratios:

- 1 Inventory turnover ratio
- 2 Account receivable turnover ratio



## Activity 12.6

In illustration 12.2 we analysed the financial statements (or information) from the point of view of three groups of people and calculated certain ratios. But these ratios by no means were all inclusive. Certain other ratios, useful for these groups of people, can also be computed. For example, some other ratios useful for equity shareholders (present and prospective) are: Return on investment (ROI), Leverage ratio, and Equity ratio.

In the context of illustration 12.2:

- a) Calculate and interpret all such ratios; and
- b) Calculate and interpret some ratios for groups of people other than the three above who might be interested in the company, e.g., preference shareholders

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## 12.6 SUMMARY

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A large number of financial ratios are in use. They fulfill a wide variety of objectives and functions. Managers evaluate performance and exercise control, investors match their expectations, and lenders undertake credit approvals with their help.

Control of business activity is crucial for efficiency. Managerial action follows meaningful information flows. Ratios provide a relevant basis, but all ratios may not serve the objective of control. A profit performance measure, which is widely prevalent, is the Return of Investment, which is considered a primary yardstick for the measurement of operational efficiency. A decomposition of this measure into its key elements as depicted in the Du pont Chart may underline areas, which need managerial control for achieving the basic goal of maximizing the return on capital employed in the enterprise

A series of secondary ratios has also been found useful in controlling business activities. Since production and sales are the key parameters in an efficient conduct of business activities, most of these ratios are related in some manner to sales and output. The focus is on revenues and costs and also on the intensity of activity as measured by the various turnover ratios. Going deeper into the conduct of business transactions, a larger number of relationships would be uncovered e.g. stores control, material usage control, labour hours control, machine maintenance quality control, operating cycle control and so on. But the focus in this unit has been on control of activities through ratios emerging from informations externally presented.

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## 12.7 KEY WORDS

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**Primary Ratio** is of primary concern for management because it provides an overall measure of business efficiency and is measured by the much controversial but nevertheless much widely employed Return on Capital Employed.

**PBDIT** or Profits before depreciation, interest and taxes. This amounts to gross cash flow.

**Liquidity Ratios** measure the short-term solvency of the firm.



**Leverage Ratios** measure the long-term solvency of the firm and also provide an idea of the equity cushion for long-term indebtedness.

**Activity or Turnover Ratios** measure the intensity with which resources of the firm are being utilised.

**Average Capital Employed** is one-half of the sum total of opening and closing balances of capital, reserves, accumulated depreciation and long-term debt.

**Net Total Assets** are obtained by deducting current liabilities from total assets.

**Equity Multiplier** is used to derive the Return on Equity from the Return on Investment, and is computed by dividing Equity into total assets.

**Ratio Norm** is obtained for different kinds of ratios either as an average over time of the same firm, or an industry average or an average of a cross-section of firms, and is used to evaluate performance and for control purposes.

**Average Collection period** is obtained by dividing average accounts receivables with net credit sales and multiplying the resultant with 365 days of the year. It suggests the average credit period actually granted during a year.

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## 12.8 SELF-ASSESSMENT QUESTIONS/ EXERCISES

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1. List the fundamental accounting ratios. Why are they called 'fundamental'?
2. What are 'Stability' ratios?. Can they be classed as 'fundamental ratios'?
3. Enumerate ratios that are appropriate for controlling business activities. What common criterion/criteria bring them together into one category?
4. Which of the control ratios are more important in your view? Why?
5. Point out the major limitation of Return on Capital Employed as a basis for comparing one firm with another.
6. What is Return on Equity? Why do we measure it?
7. The ratios measuring management's overall effectiveness as shown by the return generated on sales and investment are
  - a) Leverage ratios
  - b) Profitability ratios
  - c) Activity ratios
  - d) Liquidity ratios
8. According to the Du pont analysis, firms dealing with relatively perishable commodities would be expected to have.
  - a) High profit margins and high turnover
  - b) Low profit margins and low turnover
  - c) High profit margins and low turnover
  - d) Low profit margins and high turnover
  - e) None of the above
9. Inventory turnover is defined as \_\_\_\_\_ divided by inventories.
  - a) Cost of goods sold
  - b) Accounts receivable
  - c) Gross profit
  - d) Net operating income
10. The primary purpose of the current ratios is to measure a firm's
  - a) Use of debt
  - b) Profitability



- c) Effectiveness  
d) Liquidity  
e) None of these
11. The Du pont System is designed to help pinpoint the trouble if a firm has relatively low rate of return on equity. It focuses on the total asset turnover ratio, the profit margin, and the equity/asset ratio ☐ True ☐ False
12. Because inventories are less liquid than other current assets, the quick ratio is regarded as being a more stringent test of liquidity than the current ratio. .  
☐ True ☐ False
13. Other things being constant, (assuming an initial current ratio greater than 1.00) which of the following will not affect the current ratio?  
a) Fixed assets are sold for cash  
b) Long-term debt is issued to pay off current indebtedness  
c) Accounts receivables are collected  
d) Cash is used to pay off accounts payable  
e) A bank loan is obtained
14. The average collection period is found by dividing \_\_\_\_\_ with \_\_\_\_\_ and then dividing average sales per day into accounts \_\_\_\_\_. The average collection period is the length of time that a firm must wait after making a sale before it receives \_\_\_\_\_.
15. Individual ratios are of little value in analysing a company's financial condition. More important is the \_\_\_\_\_ of a ratio over time, and a comparison of the company's ratios to \_\_\_\_\_ ratios.
16. Prabhat Industries profit margin is 6 per cent, its total assets turnover ratio is 2 times, and its equity/total assets ratio is 40%. The company's rate of return on equity is  
(a) 5%            (b) 7.5%            (c) 12%            (d) 30%            (e) 20%
17. If the net profit margin for a firm is 20%, and the ROI is 10%, the total assets turnover ratio must be  
(a) 1            (b) 2            (c) .5            (d) .2            (e) Not possible to compute.
18. Determine the sales of a firm with the financial data given below:  
Current ratio 2.7  
Quick ratio 1.8  
Current liabilities Rs. 6,00,000  
Inventory turnover 4 times  
a) Rs. 34,00,000  
b) Rs.19,60,000  
c) Rs. 21,60,000  
d) Rs.14,20,000  
e) Rs.16,40,000
19. Complete the balance sheet and sales data by filling in the blanks using the following financial data:
- |   |           |
|---|-----------|
| Debt/Net worth                                | 50%       |
| Acid Test ratio                               | 1.4       |
| Total Assets turnover                         | 1.6 times |
| Days sales outstanding in accounts receivable | 40 days   |
| Gross profit margin                           | 25%       |
| Inventory turnover                            | 5 times   |

**Balance Sheet**

Rs.

Ratio Analysis



	Rs.	Cash	
Equity Share Capital	25,000	Accounts Receivable	_____
General Reserve	26,000	Inventories	_____
Accounts Payable	_____	Plant & Equipment	_____
	_____	Total assets	_____
Total capital and liabilities	_____	Sales	_____
		Cost of goods sold	_____

20. Weldone Co. and Goodluck Co, trade in the same industry but in different geographical locations. The following data are taken from the 2002 annual accounts.

	<b>Weldone Rs.</b>	<b>Goodluck Rs.</b>
Turnover	40,000	60,000
Total operating expenses	36,000	55,000
Average total assets during 2002	30,000	25,000

Attempt the following (ignore taxation):

- Calculate the rate of return on total assets (profit as a percentage of total assets) for each company.
- Analyse the rates of return in part (a) into the net profit percentage and the ratio of turnover to total assets.
- Comment on the relative performance of the two companies in so far as the information permits. Indicate what additional information you would require to decide which company is the better proposition from the viewpoint of:
  - potential shareholder; and
  - potential loan creditors

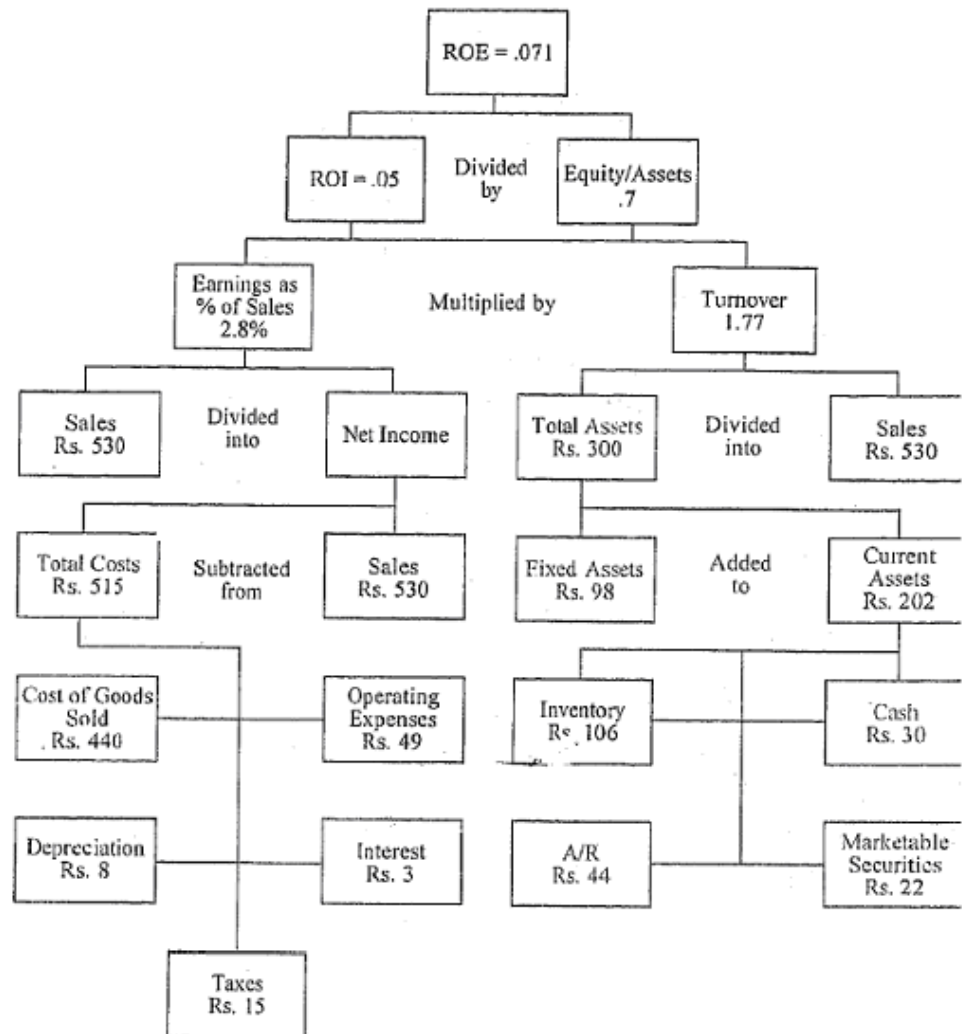
21. Abrasives Ltd., has the following turnover ratios presented along with the corresponding industry averages:

<b>Ratio description</b>	<b>Abrasive's ratio</b>	<b>Industry average</b>
Sales / Inventory	530/101 = 5 times	10 tithes
Sales / Receivables	530/44 = 12 times	15 times
Sales / Fixed assets	530/98 = 5.4 times	6 times
Sales / Total assets	530/300 = 1.77 times	3 times

Financial analysis of the company is presented on the next page in the form of a Du Pont Chart. Study the chart, along with the four turnover ratios and industry averages, and comment on the major weaknesses of the company where managerial attention must be focused for future control.



### Du Pont Chart of Abrasives Ltd.



### Answers or Approaches to Activities

#### Activity 12.1

##### Ratio Nos.

##### Broad Class

1 to 3	Secondary, Owners
4 & 5	Secondary, Lenders,, Liquidity
6 to 9	Secondary, Management, Activity
10 to 12	Primary, Management, Profitability, Owners
13 to 15	Secondary, Management, Profitability (Appropriation)
16 to 21	Secondary, Lenders, Leverage

#### Activity 12.2

- a) Nagpur Textile Mills data relating to average number of days of inventory will have to be converted into inventory ratio as follows:

$$100 + \frac{\text{No. of days in an accounting period}}{\text{Average No. of days of inventory}}$$

Assuming the numerator to be 365 days, the inventory turnover ratios for the five years will be:



Year	Inventory turnover ratios
1998	$100 \div 365 / 90 = 24.66$
1999	$100 \div 365 / 118 = 32.33$
2000	$100 \div 365 / 115 = 31.51$
2001	$100 \times 365 / 107 = 2932$
2002	$100 \times 365 / 89 = 24.39$

- b) Nagpur Textile's is a composite mill. It may, therefore, be appropriate to compare the inventory ratios for five years with the annual averages of composite mills for five years. It is manifest that Nagpur Textile's inventory turnover ratio is higher than the industry average for the years 1999-2001.
- c) The trend for the last four years since 1999 is for the ratio to decline.

### Activity 12.3

- a) True
- b) False
- c) True
- d) True
- e) False
- f) False
- g) True
- h) True because inventory which is the denominator of the ratio is also carried generally at cost in a world of rising prices.
- i) False because it reflects only the average credit period and does not state anything about discounts and credit standards.
- j) True

### Activity 12.4

Ratio	Information inputs	Computed ratio for the year		
		2001	2002	2003
1. Cost of goods sold	$(7) \div (6)$	85.06	81.97	84.13
2. Gross margin	$(6) - (7) \div (6)$	14.94	18.03	15.87
3. Net margin	$(14) \div (6)$	4.74	2.54	3.26
4. Operating margin	$(10) + (9) \div (6)$	5.24	4.34	5.18
5. Post-tax margin	$(14) + (9) \times (13) / (12) \div 6$	9.80	6.53	6.30
6. Operating Ratio	$(6) - (10) \div (6)$	99.82	99.66	98.33
7. Total Contribution	$(6) - (8) \div (6)$	35.02	35.56	34.70
8. Gross Assets Turnover	$(6) \div (4)$	1.05	1.25	1.45
9. Net Assets Turnover	$(6) \div (4) - (5)$	1.97	2.36	2.52
10. Inventory Turnover	$(7) \div (2)$	4.09	5.16	6.38
11. Receivables Turnover	$(6) \div (2A)$	11.13	11.03	14.50
12. Average Collection Period (Days)	$(2A) \div (6) / 365$	32.78	33.10	25.17





### Activity 12.5

a)	Gross Return on Investment	<b>2001</b>	<b>2002</b>	<b>2003</b>
	Net Return on Investment	12.61	9.86	11.14
	Return on Capital employed	4.51	3.57	5.81
		11.63	9.90	12.61

- b) You may first proceed to find out the Equity multiplier viz., Total Net Assets/Equity for each of the three years, and then multiply the ROI by this multiplier. Equity multipliers for the three years are as follows:

Years	Equity multiplier
2001	$95.30/33.97 = 2.81$
2002	$140.79/39.41 = 3.57$
2003	$158.82/53.16 = 2.99$
Return on Equity	12.67   12.75   17.37

### Answers to Self-Assessment Questions/ Exercises

- 7 (b)  
8 (d)  
9 (a)  
10 (d)  
11 (True)  
12 (True)  
13 (c)  
14 annual sales; 360; receivable; cost;  
15 Trend; industry average;  
16 (d)  
17 (c)  
18 (c)  
19 Accounts payable = Rs. 25,500; Total Capital and Liabilities as well as Total Assets = Rs. 76,500; Cash = Rs. 22,100; Accounts Receivable = Rs. 13,600; Inventories = Rs. 24,480; Cost of goods sold = Rs. 91,800; Plant & Equipment = Rs. 16,320; and Sales = 1,22,400.  
20.
- |                                   | <b>Weldone Co.</b> | <b>Goodluck Co.</b> |
|-----------------------------------|--------------------|---------------------|
| a) Rate of return on total assets | 13.3%              | 20%                 |
| b) Net profit percentage          | 10%                | 8.3%                |
| Asset turnover                    | 1.33 times         | 2.4 times           |
- c) The three ratios provide an estimate of a company's overall performance. They are inter-related: 
$$\frac{\text{Profit}}{\text{Assets}} = \frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}}$$

From the viewpoint of potential investors - shareholders and loan creditors - the overall performance is important. In what way the profit between the two types of finance (loan and equity) is apportioned is also of equal importance. They will therefore need information about capital leverage i.e. the relation-ship between equity and loan capital and the relationship between profits and interest payments.

The potential loan creditor will also require information about security that the company can provide.



The potential shareholders are also interested in future dividends as well as current yields. They will need information about the share prices and earnings per share so that they could make relevant comparison against similar other investment in terms of PEE ratio and yield.

- 21      a)      Profit margin not too bad ; assets turnover quite low. Action required.
- b)      Inventory per unit of sales higher than other firms. Action required. Implications and impact of suggested action (like funds released in the wake of inventory reduction utilized in liquidating debt and reducing interest burden with improved profit prospects) should be highlighted.
- c)      Excess capacity situation may exist, though not with definitiveness

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## 12.9 FURTHER READINGS

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## AUDIO PROGRAMME

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*Role and Regulation of Stock Markets*